

**REMARKS**

**I. Status of Claims**

Upon entry of the Amendment, which is respectfully requested, claims 2-4, 6, 7, 9-11, 13 and 14 will be pending in the application.

Claims 2 and 9 are amended to incorporate subject matter of claims 5 and 12, and to further recite that the graphite target moves in parallel and perpendicular directions to a central axis of the graphite target. Support for the amendment can be found, for example, at page 19, lines 16-23 of the present specification.

Claims 4, 6-7, 10-11 and 13-14 are amended to modify their dependencies.

Claims 1, 5, 8 and 12 are canceled without prejudice or disclaimer.

No new matter is added. Accordingly, entry of the Amendment is respectfully requested.

**II. Response to Claim Objections**

Claims 5-7 and 12-14 are objected to as allegedly in improper multiple dependant form.

Applicants note that claims 5 and 12 are canceled.

Applicants respectfully submit that claims 6, 7, 13 and 14 were previously amended in the Preliminary Amendment filed on February 15, 2006, to depend from any one of claims 1-3 and any one of claims 8-10, respectively. These claims are currently amended to depend from claims 2 or 3 and 9 or 10, respectively. Therefore, Applicants respectfully submit that the claims are in proper form pursuant to 37 C.F.R. § 1.75(c).

In view of the above, the Examiner is respectfully requested to acknowledge the Preliminary Amendment of February 15, 2006, and to withdraw the objection to claims 6, 7, 13 and 14.

**III. Response to Claim Rejections**

The present claims are rejected as follows:

(i) Claims 1, 2, 7-11, 13 and 14 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Iijima et al. ("Nano-aggregates of single-walled graphitic carbon nano-horns"; Chem. Phys. Lett. 309, pp. 165-170.);

(ii) Claims 3, 4, and 6 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Iijima, in view of Makoto et al. (JP 2000-249540).

(iii) Claims 5 and 12 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Makoto, and further in view of Mineta et al. (JP 60-194066).

Claims 1 and 8 are canceled without prejudice or disclaimer.

Applicants respectfully submit that claims 2-4, 6, 7, 9-11, 13 and 14 are patentable over Iijima, Makoto or Mineta, individually or in any reasonable combination, at least for the following reasons.

Present claim 2 recites an apparatus for manufacturing nano-carbon, comprising "a light source which irradiates light to said surface of said graphite target at a substantially constant irradiating angle" and a moving unit to move a graphite target, while maintaining the substantially constant irradiating angle "in a direction parallel to and in a direction perpendicular to a central axis of said graphite target." Claim 9 recites analogous features.

In contrast, at the first full paragraph at the left column on page 166, Iijima discloses that a graphite target rod is rotated around its axis and advanced along its axis. However, there is no teaching or suggestion in Iijima that the target rod can be moved perpendicular to the central axis. Neither Makoto nor Mineta remedies this deficiency.

Furthermore, Iijima fails to teach maintaining a substantially constant angle of incidence of the illumination while moving the graphite target to move an irradiation position of light on the target. Regarding Makoto, the Examiner acknowledges that Makoto fails to teach this feature. (Office Action, page 5.) The Examiner alleges that this is taught by Fig. 4 of Mineta. However, Applicants submit that the Examiner is mistaken. Rather, Mineta merely describes a range of irradiation angles.

In view of the above, Applicants respectfully submit that claims 2 and 9 are patentable over the cited references and that claims 3, 4, 6, 7, 10, 11, 13 and 14 are patentable at least by virtue of their dependencies.

Therefore, reconsideration and withdrawal of the §§ 102 and 103 rejections are respectfully requested.

#### **IV. Provisional Double Patenting Rejections**

Claims 1-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as allegedly unpatentable over:

- (i) claims 1-13 of copending Application No. 10/544400;
- (ii) claims 1-12 of copending Application No. 10/555064;
- (iii) claims 21-29 of copending Application No. 10/560593;
- (iv) claims 1-20 of copending Application No. 10/556088; and,

(v) claims 1-14 of copending Application No. 10/544133.

Applicants respectfully request that these provisional rejections be held in abeyance until the claims are otherwise in condition for allowance.

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: March 12, 2009

  
Laura Moskowitz  
Registration No. 55,470